

WHAT IS CLAIMED IS:

1        1.        A ground-fault detecting device, comprising:  
2                    a power source, electrically insulated from a vehicle body;  
3                    a pulse signal generator, generating a pulse signal having a high level  
4        and a low level which are appeared repeatedly in a prescribed cycle;  
5                    a detection resistor, connected to the pulse signal generator and the  
6        power source;  
7                    a coupling capacitor, connected to the detecting resistor in series;  
8                    an integrator, integrating a difference between a first reference voltage  
9        and a detection voltage of the pulse signal at a connecting point of the detection  
10       resistor and the coupling capacitor over an integration interval; and  
11                    a ground-fault determinant, judging whether a ground fault is occurred  
12       on the basis of an output of the integrator,  
13                    wherein the integration interval has at least part of a high-level interval  
14       and a low-level interval of the pulse signal.

1       2.        The ground-fault detecting device as set forth in claim 1, wherein the  
2       integrator includes:  
3                    an integration circuit, integrating the difference between the detection  
4       voltage and the first reference voltage; and  
5                    an integration reset signal generation circuit, generating a reset signal  
6       for rendering the integration circuit in a reset state over intervals other than the  
7       integration interval on the basis of the pulse signal supplied from the pulse signal  
8       generator.

1 3. The ground-fault detecting device as set forth in claim 1, wherein the  
2 ground-fault determinant is a hysteresis comparator which compares the output  
3 of the integrator with a second reference voltage for obtaining a ground-fault  
4 detection output.

1 4. The ground-fault detecting device as set forth in claim 1, wherein the  
2 ground-fault determinant is a sample-and-hold circuit which sample-and-holds the  
3 output of the integrator as an integration value for obtaining a ground-fault  
4 detection output.

1 5. The ground-fault detecting device as set forth in claim 1, further  
2 comprising a compensation capacitor, having a capacitance corresponding to a  
3 vehicle-side capacitance, and provided between the vehicle body and the  
4 coupling capacitor.

1 6. An insulation resistance measuring device, comprising:  
2 a power source;  
3 an insulation resistance, electrically insulating the power source from a  
4 vehicle body;  
5 a pulse signal generator, generating a pulse signal having a high level  
6 and a low level which are appeared repeatedly in a prescribed cycle;  
7 a detection resistor, connected to the pulse signal generator and the  
8 power source;  
9 a coupling capacitor, connected to the detecting resistor in series;  
10 an integrator, integrating a difference between a first reference voltage

11 and a detection voltage of the pulse signal at a connecting point of the detection  
12 resistor and the coupling capacitor over an integration interval; and  
13 an A/D converter, A/D converting an output of the integrator as an  
14 integration value so as to generate a digital value corresponding to a resistance  
15 value of the insulation resistance,  
16 wherein the integration interval has at least part of a high-level interval  
17 and a low-level interval of the pulse signal.

1 7. The insulation resistance measuring device as set forth in claim 6,  
2 further comprising a ground-fault determinant, judging whether a ground fault is  
3 occurred on the basis of an output of the integrator.